

Submission under 37 C.F.R. §1.114
Application No. 10/719,020
Attorney Docket No. 032130

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

Listing of Claims

Claims 1-19 (Canceled)

Claim 20 (Previously presented): A method for preparing a circuit board material, comprising:

providing a plating bath comprising: nickel sulfamate at a concentration of 300 to 600g/l; and at least one of phosphoric acid, phosphorous acid, hypophosphorous acid, and salts thereof at a concentration of phosphorus of 20 to 150g/l;

providing an electrode inside the plating bath;

providing a conductive metal foil inside the plating bath to face the electrode, the conductive metal foil having a first surface and a second surface, the second surface being masked, wherein the conductive metal foil is selected from the group consisting of copper foil, aluminium foil, aluminium alloy foil, and iron alloy foil, wherein the conductive metal foil has a surface roughness R_z of not more than $2.5\mu\text{m}$; and

applying current between the electrode and the conductive metal foil to form a thin resistance layer plated on the first surface of the conductive metal foil to prepare a circuit board

Submission under 37 C.F.R. §1.114
Application No. 10/719,020
Attorney Docket No. 032130

material, wherein the thin resistance layer has an average thickness of 2.3 to 18.0 mg/dm²;
~~wherein the thin resistance layer has a thickness of 0.025 to 0.2 μm.~~

Claim 21 (Canceled)

Claim 22 (Previously presented): A method for preparing a circuit board material according to claim 20, wherein the plating bath further comprises at least one of sulfuric acid, hydrochloric acid, and salts of the same.

Claim 23 (Previously presented): A method for preparing a circuit board material according to claim 20, wherein the plating bath has a pH of not more than 6.

Claim 24 (Previously presented): A method for preparing a circuit board material according to claim 20, wherein the plating bath is kept at a temperature of 30 to 80°C.

Claim 25 (Previously presented): A method of preparing a circuit board material according to claim 20, wherein the current is applied at a current density of 1 to 30 A/dm².

Submission under 37 C.F.R. §1.114
Application No. 10/719,020
Attorney Docket No. 032130

Claim 26 (Previously presented): A method of preparing a circuit board material according to claim 20, further comprising adhering an insulating material to the thin resistance layer formed on the first surface, and etching the conductive metal foil to make a circuit pattern.

Claims 27-32 (Canceled)

Claim 33 (New): A method of preparing a circuit board material according to claim 20, wherein the conductive metal foil has a surface roughness Rz of 1.0 μ m to 2.5 μ m.